

**OBJECTION TO THE APPLICATION BY SASRI IN RESPECT
OF A TRIAL WITH GM SUGARCANE, TO THE NATIONAL
DEPARTMENT OF AGRICULTURE, SOUTH AFRICA**

PREPARED BY



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SCIENTIFIC ASSESSMENT

BACKGROUND

Application by SASRI and Available Information

An application has been made by the South African Sugarcane Research Institute (SASRI) to conduct a trial with genetically modified sugarcane (The North Coast Courier May 13 2005). According to the public notice, several independent modifications, falling into two categories, are being investigated:

1. *To determine sucrose yields in mature plants:* endogenous enzymes (phosphofructokinase, aldolase, fructose 2,6-bisphosphate) of sugarcane plants of cultivars 88H0019, N19, N27 and N31, NCo310, have been up- or down-regulated. For the purposes of the following discussion, these are hereinafter collectively referred to as T1 modifications.
2. *To establish whether promoter elements isolated from sugarcane can be used to target gene expression to specific regions of the plant:* sugarcane plants, cultivar NCo310, have been transformed with novel promoter elements and a reporter gene b-glucuronidase (GUS) from *E.coli*. For the purposes of the following discussion, these are hereinafter collectively referred to as T2 modifications

For both of these categories of tests, the selectable marker gene, *nptII* coding for the protein neomycin phosphotransferase, which inactivates principally kanamycin, geneticin and neomycin by phosphorylation, was introduced into the sugarcane.¹

The information supplied after a request in terms of the Public Access to Information Act (PAIA) is a limited (non confidential information) 24-page copy of the application.

The Host Plant and Modified Sugarcane Varieties

Sugarcane, a perennial grass with no single genetic origin, consists of six species – two wild species, *S. spontaneum* L. and *S. robustum* and four cultivated species, *S. officinarum* L., *S. barberi* Jeswiet, *S. sinense* Roxb and *S. edule*. Hassk.² By and large, sugarcane is vegetatively propagated and does not depend on seeds. What is sold to farmers and afterwards planted is sections of the cane with shoot buds. At the time of harvesting, the roots are left in the soil for regeneration of new canes. It is necessary to plant with new buds every four years.²

Use of Antibiotic Resistance Markers

Antibiotic resistance marker genes are used often in the development of transgenic crops as selectable markers. Selectable markers allow the modified form to be selectively amplified while unmodified forms are eliminated. The use of antibiotic resistance markers has application in development of the transgenic line allowing for selection of

modified plants in the laboratory. The transgenic crop line however, will retain the marker gene for its lifetime in each of its cells.³ Several of the inserts in this trial contain an ampicillin selection gene.

MOLECULAR CHARACTERISATION

T1 Modifications

T1 modifications involve the recipient *Saccharum ssp.* with altered sucrose metabolism in one of 5 genes viz., SST, fructose 2,6 bisphosphatase (F 2,6-Pase), aldolase, phosphofruktokinase (PFK) and UDP-glucose dehydrogenase.

SST

SST which stands for the enzyme sucrose:sucrose fructosyl transferase is proposed to be involved in fructan synthesis by catalyzing the transfer of a fructosyl between two sucrose molecules to form 1-kestose and glucose. The 1-kestose can serve as an acceptor for single terminal fructosyl residue from other fructan chains.⁴

Fructose 2,6-bisphosphatase (F2,6-Pase)

Fructose, a monosaccharide, is one of the three most important blood sugars along with glucose and galactose. Fructose is derived from the digestion of sucrose (containing glucose and fructose monomers) during digestion. It has useful dietary application and is often recommended for, and consumed by, people with diabetes mellitus or hypoglycemia, because it has a very low Glycemic Index (GI 32) relative to sucrose. This low GI is attributable to the unique and lengthy metabolic pathway of fructose, which involves phosphorylation and a multi-step enzymatic process in the liver.⁵ Fructose is a major non-structural carbohydrate of many plant species.¹¹ Fructose-2,6-bisphosphate (F2,6P2) plays an important role as an intracellular signal metabolite in the control of carbohydrate metabolic fluxes in eukaryotes.⁶ F2,6-Pase catalyzes the stoichiometric conversion of F2,6P2 into fructose 6-phosphate and inorganic phosphate. This enzyme was initially reported as being purified from rat liver in 1982⁷ and is routinely used in researching aspects of glucose metabolism.

Fructose 6-phosphate 1-phosphotransferase (PFP)

The enzyme pyrophosphate fructose 6-phosphate 1-phosphotransferase (PFP) catalyses the reversible conversion of fructose 6-phosphate and pyrophosphate to fructose 1,6-bisphosphate and inorganic phosphate. PFP activity in sugarcane correlates inversely with sucrose and positively with the insoluble content across commercial varieties.⁸ Frikkie Botha of SASRI, in a paper to the Plant and Animal Genome Congress in 2000, proposed that PFP “stands central to the regulation of carbon flux between the hexosephosphate/sucrose cycle and the glycolytic pathway. The role of PFP can only be verified through the manipulation of the enzyme in transgenic plants. Over expression of endogenous PFP activity in plants is complicated by the digenic nature of the enzyme and the fact that it is finely regulated in vivo. However, both these difficulties can be overcome by the use of homodimer PFP enzymes such as those isolated from organisms

other than plants. Two PFP genes were identified for the transformation of sugarcane on the basis of their origin, amino acid sequence and codon usage. The *Giardia lamblia* PFP gene (1635bp, 50%GC) encodes a 59.8kDa monomer while a 43.3kDa protein is encoded by the *Propionibacterium freudenreichii* PFP gene (1215bp, 67%GC).⁸ Several of the lines under study in this trial incorporate these research interests and enzymatic extracts from Giardia, Propionobacteria and the rat. Furthermore, sucrose accumulation in sugarcane is viewed by SASRI, as a major obstacle for full realisation of biomass production potential⁹, a goal limited by lack of fundamental knowledge.⁹

Aldolase

Aldolases are enzymes that play a role in carbon-carbon formation. There are several aldolase enzymes and it is not clear which one/s is/are referred to in these trials. Aldolase A, for example, breaks down Fructose-1,6-bisphosphate (Fr-1,6-bisP) to Glyceraldehyde-3-phosphate and dihydroxyacetone phosphate (DHAP) in glycolysis.¹⁰

Phosphofructokinase

PFK is a glycolytic enzyme that catalyzes the irreversible transfer of a phosphate from ATP to fructose-6-phosphate. The modification of PFK activity by decreasing the concentration of the α -subunit of the enzyme is thought to offer a strategy for the alteration of the sugar content of the plant, by effecting down-regulation of the PFK enzyme and an increase in the sucrose content of the sugarcane.¹¹

UDP-glucose Dehydrogenase

Several of the upstream sources of the component sugars of polydisaccharides are nucleotide sugars, the active forms of monosaccharides. One of the routes for generation of these nucleotides may be through interconversion of existing sugars. UDP-glucuronic acid is such a compound that is generated from UDP-glucose via the action of UDP-glucose dehydrogenase (Ugd1p) and depending on the cell type may be further converted to UDP-xylose, UDP-arabinose, UDP-galacturonic acid, or other compounds. These compounds are very important in plants for example where the matrix which are constitutively synthesized to maintain cell wall integrity, may derive half of their mass from monosaccharides donated from UDP-GlcUA derivatives.¹²

T2 modifications

T2 modifications for assessing promoter function entails assessment of beta-glucuronidase (GUS) expression. Promoter function in the T2 transformants was determined by detecting for (GUS) protein coded for by the GUS reporter gene used to assist in monitoring vegetative inheritance of these genes.¹³ The T2 modified plants have been subjected to bombardment with plasmid vector pEmuKN. The Emu promoter has a truncated maize Adh 1 promoter, multiple copies of the Anaerobic Responsive Element from the maize Adh 1 gene and ocs-elements from the octopine synthase gene of *Agrobacterium tumefaciens*¹⁴. The gene contains an antibiotic selectable marker, nptII, from *Escherichia coli* conferring resistance to the antibiotic geneticin and the terminator sequence contains the nopaline synthase (nos) gene derived from the Ti plasmid of *Agrobacterium tumefaciens*.¹⁴

SUCROSE MODIFICATION

In excess of 60 different lines are proposed for study in the trial. The discussion below covers the broader aspects of the different genetic modifications.

Why Modify Sucrose Content?

Sucrose has a high calorific value and there is increased pressure on producers to find alternatives. These include, amongst others, fructose, glucose and palatinose which are typically produced on a commercial scale through microbially mediated processes in large biofermenters typically at relatively high cost.¹¹ It has been proposed that transgenic plants might serve as a cheaper alternative for the production of sucrose substitutes.

Why is Tampering with Sucrose Metabolism Tricky?

Sugar signalling is the interaction between a sugar molecule and a sensor protein that generates a signal. Sugars are signaling compounds in plant metabolism and any alteration in metabolism may have implications for all stages of a plant's lifecycle, from seed germination and vegetative growth to reproductive development and seed formation.¹⁵ The research in this regard can still be considered to be in its infancy and whilst no specific changes in plant development have been reported as a consequence of genetic modification of plant sugar levels such changes cannot be ruled out. Sucrose has been widely reported as having a signalling role. Any genetic modification of the sugarcane plant has to ensure conservation of sugar signaling mechanisms. Any research outcome that successfully achieves increased sucrose content without adverse impact on plant metabolism or the production of sucrose alternatives in plants may be exploited for commercial gain.

Sequence Information

No sequence information has been provided for either T1 or T2 lines.

CONCERNS REGARDING GENETIC MODIFICATION

Degree of Certainty

In general, genetic modification by the application of recombinant DNA technology is characterised by scientific uncertainty. This stems from several factors including the inherent imprecision of currently employed recombinant DNA techniques, the use of powerful promoter sequences in genetic constructs and the generation, as a result of genetic modification, of novel proteins to which humans and animals have never previously been exposed¹⁶. Additionally, the gaps in the knowledge regarding composition and functioning of the genomes that are often subjected to genetic manipulation and ill-designed experiments compound such scientific uncertainty.¹⁶

Uncertainty is a key element of the Biosafety Protocol (Cartagena Protocol on Biosafety to the Convention on Biological Diversity).¹⁷ The lack of sufficient relevant scientific information and knowledge regarding the extent of potential adverse effects allows the

Precautionary Principle referenced in the Biosafety Protocol to be triggered. The precautionary principle states “where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation”.

Possible unintended effects of the non-functional DNA fragments

Unintended effects that are not detected in the lab and that may only become apparent in the long term cannot be ruled out. Transformation by particle acceleration is associated with multiple fragments and gene rearrangements.^{18,19} The European Commission Scientific Committee on Food²⁰ has stated that the lack of transcription or translation signals from Northern and Western blots, does not ‘preclude absolutely the possibility that the truncated gene is expressed but the possibility that this is the case will be extremely remote.’²⁰ Inserted gene sequences may interrupt native gene sequences and/or their promoters and additional code fragments are not necessarily non-functional and may be transcribed. Extra gene fragments in Monsanto’s Roundup Ready Soya were also claimed to be non-functional and not-transcribed²¹, but were later found to be transcribed to produce RNA.^{22,23}

Further, it is not clear if the insert or fragments thereof lie on any transposons and what the impact of the DNA insert is on flanking sequences. The lack of sophisticated methods for targeted insertion, especially in higher organisms,¹⁹ necessitates more rigorous research into possible position effects prior to the granting of any release of transgenic organisms into the environment. Further, if transgenes behave just like naturally occurring genes, then they have the potential to be inherited in the same way and persist indefinitely in cultivated or free-living populations. Any mixing of native and transgenic plants whether by dispersal, improper handling etc., can result in the spread of transgenes. The consequences, both ecological and evolutionary of crop-to-crop gene flow are only now beginning to be investigated in any meaningful way and the possible exposure of non-target organisms, including humans to novel proteins cannot be discounted.¹⁹

Horizontal Gene Transfer (HGT)

Horizontal gene transfer (HGT) is the transfer of genetic material between organisms, outside the context of parent to offspring reproduction.²⁴ It is most commonly recognized as infectious transfer.²⁵ HGT frequencies are now known to be much higher than originally thought. The evolution of antibiotic resistance, for example, is an indicator of the frequency of gene transfer, given that antibiotics have been used in medicine only for about 50 years.²⁵ The intentional modification of plants could through horizontal gene transfer result in the unintentional modification of other organisms. What the possible impacts of such gene transfer might be is not known.

Potential for HGT of Antibiotic Resistance Marker Genes (ARMG)

The significance of any potential gene transfer is dependent on the marker being transferred and what its existing or future therapeutic application is or might be. Where there are antibiotic resistant marker genes such as *nptII*, there is a potential for gene

transfer of these markers to pathogenic organisms. Geneticin is toxic to bacteria, yeast, protozoa, helminths, and mammalian cells.²⁶ Ampicillin is widely used for treatment of human bacterial infections and its spread to harmful organisms could compromise its therapeutic value. The possibility of transfer of the marker by HGT, and subsequent adverse effects on human and animal health, cannot be ruled out in those cases where these antibiotics are still being used. Several European countries including Austria, Luxembourg, France, Norway and the United Kingdom have expressed grave concerns about the presence of antibiotic genes in GM products and the EU has as a result, decided to prohibit GMOs with antibiotic resistance genes after the 31st December 2004 (directive 2001/18EC and Revising Directive 90/220/CEE).²⁷

Stability of the CaMV Promoter

The genes in both T1 and T2 are under the control of the Cauliflower Mosaic Virus CaMV35S promoter and terminator. The CaMV 35S promoter has been found to have a recombination hotspot where it tends to fragment and join with other double stranded DNA in very non-specific way²⁸. These hotspots are flanked by multiple motifs involved in recombination and functions efficiently in all plants, green algae, yeast and *Escherichia coli*. The potential exists for the viral genes to recombine with other viruses to generate new infectious viruses,²⁸ carcinogens and mutagens and reactivate dormant viruses. Detractors claimed that virus infected cabbages and cauliflower have been consumed for years with no ill effects and that similar pararetroviral sequences occur widely in plants causing no apparent harm.²⁹ That the intact virus causes no obvious harm in the natural host is related to the fact that its integrity is maintained and that it is adaptive to the host biology. This is unlike the fragments of naked DNA as in transformed plants where the natural regulatory mechanisms are not present.²⁸ A call has been made that the use of the CaMV promoter in transgenic plants be phased out due to the structural instability arising out of its use.³⁰ Information relating to “event specific” molecular analysis has not been provided for any of the transgenic events. We believe it to be necessary that such molecular characterization be carried out and submitted or if it has been carried out be made available for independent scrutiny.

Allergenicity

The nature of genetic modification of higher plants results in the production of novel proteins which might cause allergic reactions. One reason for the failure of identification of GM crops as allergenic is related to the fact that the testing and assessment thereof is left up to the developer of the transgenic organism and that no standardized agreed-upon protocols exist for such testing.³ Cry1Ab, for example, has three characteristics of allergenic proteins, namely digestive stability, heat stability and structural similarity to vitellogenin, an egg yolk allergen.³¹

CONCLUSIONS-SCIENTIFIC ASSESSMENT

The available scientific information, as provided by the applicant, does not allow for a full evaluation or determination of the associated risks of the use of the transgenic lines. At a minimum, the literature indicates that a great deal more investigation has to be

carried out on the impacts of transgenes before their release into the environment. No indication is given of what the future intention of the transgenic development is and applicant has previously carried out similar trials and claimed the purpose as being for ‘proof of concept’ only;¹⁴ are we to assume the same applies here. In several instances where claims are made by the applicant of no adverse effects to human and animal health and the environment from release of the transgenic organism the reason is given that there is no difference between the native and genetically modified form. The preceding discussion makes it clear that this is not the case. At the very least, independently verifiable research has to be carried out before such claims are made.

Any potential category of risk introduced by the genetic modification as compared to risks from conventional breeding is still unclear from the application. The ability of ecosystems to develop gradually, the ability to anticipate environmental health effects and very importantly, the establishment of regulatory mechanisms that can effectively, efficiently and credibly manage risks associated with the use of GMOs has not kept apace with the rapid introduction of GMOs. Traditional breeding practices have an established history of safe use dating back several years as opposed to the application of recombinant DNA technology for human use, which is as young as 22 years when genetically modified bacteria-produced insulin was first introduced and even younger for genetically modified plants at ten years.¹⁶

LEGAL OBJECTIONS

EC HAS STATUTORY DUTY TO PROTECT THE ENVIRONMENT AND NOT PROMOTE INTERESTS OF SUGARCANE INDUSTRY

It has come to our attention that the field trials and associated research is funded by the South African sugarcane industry (millers and growers), keen to increase sugarcane production-for various commercial reasons. However, the proposed trials are intended for open release into the environment. In this regard, it is imperative that in exercising its decision-making powers, the Executive Council (EC) bears in mind its constitutional obligations to protect the environment and not to allow the land of South Africa to be used as a haven for genetic engineering experimentation by industry. In this regard, we remind the EC that the Constitution of the Republic of South Africa 108 of 1996 is the highest law in the country.

The centrality of the Bill of Rights to the Constitution, and its foundational values to South Africa’s newly created democracy is expressed in section 7 of the Constitution, which provides:

“Rights

7 (1) This Bill of Rights is a cornerstone of democracy in South Africa. It enshrines the rights of all people in our country and affirms the democratic values of human dignity, equality and freedom.

(2) The State must respect, protect, promote and fulfil the rights in the Bill of Rights.

(3) The rights in the Bill of Rights are subject to the limitations contained or referred to in section 36, or elsewhere in the Bill.”

Section 24 of the Constitution entrenches the rights of all South Africans to an environment that is not harmful to health or well-being and imposes an obligation on the state to protect the environment, for the benefit of present and future generations.

The guarantee contained in section 24 of the Constitution forms part of the cluster of socio-economic rights.

INADQUACY OF INFORMATION SUPPLIED BY APPLICANT

ACB received an astonishing paucity of information-24 pages of information, with the result that it has been severely hamstrung in conducting any meaningful assessment of the applications. This biased and grossly inequitable situation has arisen principally, because the NDA has failed to establish a proper formal process for the determination and characterisation of what constitutes confidential business information (CBI). Consequently, the ACB has been severely prejudiced in objecting to this application.

FAILURE BY EC TO COMPLY WITH PROVISIONS OF PAJA-NO AUTHORITY TO TAKE DECISIONS

Administrative action on the part of the EC, more particularly, decisions taken by it approving applications for the import, release and marketing of GMOs adversely affect the fundamental human rights of the public. These rights include inter alia, the right to nutritious, safe and culturally acceptable food, the right to informed choice, the right to fair administrative decision-making, the right to democratic participation, the right to save and exchange seeds, and the right to a safe and healthy environment.

It is our belief that administrative decision-making on the part of the EC established under the GMO Act concerning GMOs fall within the purview especially of section 4(1)(a) and (b) of Promotion of Administrative Justice Act No 3 of 2000 (“PAJA”). In terms of section 4(1) of PAJA, the EC must, in order to give effect to the right to procedurally fair administrative action, decide whether-

- “ (a) to hold a public enquiry;
 - (b) to follow a notice and comment procedure in terms of subsection (3);
 - (c) to follow the procedures in both subsections (2) and (3);
 - (d) where the administrator is empowered by an empowering provision to follow a procedure which is fair but different, to follow that procedure; or
 - (e) to follow another appropriate procedure which gives effect to section 3.”
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It is our view that regulation 6 of the Regulations made under the GMO Act is not in compliance with sections 3 and 4(1) of PAJA.

In this regard, we bring to your attention the judgement of Wills J, in an unreported judgment in the matter of Sasol Oil (Pty) Ltd and Bright Sun Developments CC v Mary Metcalfe NO Case No 17363/03, High Court of South Africa (Witwatersrand Local Division) when the learned Judge stated that:

“ It is trite that in the interpretation of ordinary statutes, to the extent that there is inconsistency between earlier and subsequent legislation, the provisions of subsequent legislation will ordinarily prevail....The purpose of PAJA is plainly to give effect to the rights, constitutionally enshrined in the Bill of Rights of the Constitution, to just administrative action. It is constitutional legislation. It is triumphal legislation... We have resolved, almost unanimously, that never again must such injustices as had been experienced under apartheid and in other parts of the world prevail in our own country...[PAJA] confers rights upon all who lives in South Africa in so far as their dealings with organs of State are concerned. To the extent that earlier legislation is inconsistent with PAJA, PAJA must prevail.”

It is our contention that regulation 6 of the Regulations made under the GMO Act is inconsistent with the provisions of PAJA. In terms of the above judgment, PAJA triumphs the said Regulations made under the GMO Act; whereas the Regulations of the GMO Act came into effect on the 1 December 1999, PAJA came into effect on the 3 February 2000. The Regulations made under the GMO Act are in any event, subordinate legislation and can in no way be said to be equivalent to constitutional legislation such as PAJA.

In any event, we are of the belief that the said regulation 6 which deals with an invitation by an applicant to members of the public in the area where a release is intended to take place, is not within the contemplation of sections 3 and 4(1) of PAJA. Both section 3 and 4(1) of PAJA deal with administrative action. It is clearly the intention of the legislature that PAJA should apply to the duty on the part of the administrator regarding administrative actions vis-à-vis the public, in ensuring fair administrative justice.

Since regulation 6 of Regulations of the GMO Act deals with a notice and comment procedure (between an applicant and members of the public where the release is intended to take place), we illustrate below, for your convenience, the marked difference between regulation 6 and the Regulations promulgated in terms of PAJA (Government Gazette Vol. 446. No 23710, 31 July 2002.

In this regard, please take note special note that Chapter 2 of the latter Regulations (PAJA Regulations) deals with the Notice and Comment Procedure on the part of the administrator, regarding administrative action as is required by section 4(1) of PAJA and

not, notices by the applicant, as is required by regulation 6 of the GMO Regulations, for comments by the public.

“18.

1. Information concerning the proposed administrative action must be published by way of notice-

- (a) if the administrative action affects the rights of the public throughout the Republic, in the Government Gazette and a newspaper which is distributed, or in newspapers which collectively are distributed, throughout the Republic;

2. A notice published in terms of subregulation (1) must include-

- (a) an invitation to members of the public to submit comments in connection with the proposed administrative action to the administrator concerned on or before a date specified in the notice, which date may not be earlier than 30 days from the date of publication of the notice;
- (b) a caution that comments received after the closing date may be disregarded;
- (c) the name and official title of the person to whom any comments must be sent or delivered....”

3. A notice published in terms of subregulation (1) must-

- (a) contain, sufficient information about the proposed administrative action to enable members of the public to submit meaningful comments....”

19. 1. A notice published in terms of regulation 18(1) must be in at least two of the official languages.

20. .1 If any proposed administrative action may materially and adversely affect the rights of members of a specific community consisting of a significant proportion of people who cannot read or write or who otherwise need special assistance-

- (a) A notice must be published in the area of that community in a manner that will bring the proposed action to the attention of community at large; and
- (b) The Administrator must take special steps to solicit the views of the members of the community.

2. Special steps in terms of subregulation (1)(b) may include-

- (a) the holding of public or group meetings where the proposed action is explained, questions are answered and views from the audience is minuted;
- (b) a survey of public opinion in the community on the proposed action; or
- (c) provision of a secretarial facility in the community where members of the community can state their views on the proposed action.”

In the light of there having been a failure on the part of the EC to comply with sections 3 and 4(1) of PAJA, read together with the said PAJA Regulations, we believe that decision-making on the part of the EC will be ultra vires and therefore null and void.

We therefore call upon the EC to desist from making any decision and comply with the said provisions of PAJA.

NON-COMPLIANCE WITH ENVIRONMENT CONSERVATION ACT AND THE ECA REGULATIONS

Section 21 (1) of the Environment Conservation Act 73 of 1989 (“ECA”) provides as follows:

“ The Minister may by notice in the Gazette identify those activities which in his opinion may have a substantial detrimental effect on the environment, whether in general or in respect of certain areas.”

Acting pursuant to this power, and by Government Notice R1182, Government Gazette 18261 of 5 September 1997, the Minister identified certain activities, which may have a substantial detrimental effect on the environment. One of the activities listed in schedule 1 of Government Notice R1182 in item 6, is described as follows:

“the genetic modification of any organism with the purpose of fundamentally changing the inherent characteristics of that organism”

The effect of the identification of the activities listed in Government Notice R1182 is that it triggers the prohibition in section 22 of the ECA and requires written authorisation to carry on the activity in question by a competent authority designated by the Minister in the Gazette.

Regulations governing activities identified under section 21(1) of the ECA were promulgated in Government Notice R1183, Government Gazette of 5 September 1997 (“the ECA Regulations”).

The ECA Regulations set out, inter alia, the requirements for an application for authorisation to pursue an identified activity. The ECA Regulations make provision for the submission of a Scoping Report together with the required contents of such a report (Regulation 6(1)).

In other words, the Applicant is obliged to submit a Scoping Report in terms of the ECA Regulations, and in compliance with its provisions and requirements. These include inter alia, the employment of an independent consultant; identification of environmental issues and full details regarding alternatives, in the said Scoping Report, as required by the ECA Regulations.

It is our contention that if the EC is satisfied that the applicants have been able to produce a Scoping Report, (which has not been furnished to the Centre) it is our contention that the Applicant has not fully complied with the requirements of the ECA Regulations.

In terms of section 3 (1) of the ECA Regulations an Applicant-

must appoint an independent consultant who must on behalf of the applicant comply with these regulations;

-

(c) must ensure that the consultant has no financial or other interests in the undertaking of the proposed activity, except with regard to the compliance of these Regulations.

It is our contention that the Applicant has failed to comply with section 3(1) of the ECA Regulations. We have thoroughly perused the information furnished to us, and have not found any evidence to show that the Applicant had complied with these provisions.

In terms of section 2(2) of the ECA Regulations, if any provision of sub-regulation (1) is not complied with by the applicant and not immediately attended to, after having been made aware of it by the relevant authority, the application is regarded to have been withdrawn.

The Applicant is obliged in terms of section 6(1) of the ECA Regulations to submit a scoping report to the EC, which must include:

a brief project description;

a brief description of how the environment may be affected;

a description of all alternatives; and

an appendix containing a description and public participation process followed, including a list of interested parties and their comments.

We have thoroughly perused the information furnished to us, and have not found any evidence to show that the Applicant had complied with these provisions. It is our contention that the Applicant has failed to comply with subsections (c) and (d) above

In the circumstances, the Applicant is obliged to withdraw its application, alternatively, the EC is obliged to refuse to grant the application.

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